UK

Switch mode

BATTERY CHARGER

For lead-acid batteries 1.2-32 Ah

CTEK XS 800

User's Manual and guide to professional battery charging of starter and deep cycle batteries.

INTRODUCTION

CTEK XS 800 is a switch mode charger with pulse maintenance and is a part of a series of professional battery chargers from CTEK SWEDEN AB. These chargers represent the latest technology within battery charging. A CTEK XS 800 gives the battery maximum life. **Read this User's Manual and follow the instructions carefully before you start to use the charger.**

SAFETY

- The charger is designed to charge 12 V lead-acid batteries from 1.2 to 32 Ah. However, the charger can maintain batteries up to 60 Ah. Do not use the charger for any other purpose.
- Wear protective glasses and turn your face away when connecting or disconnecting the battery!
- It is important to avoid sparks in the immediate vicinity as the battery can give off explosion gases during charging.
- Battery acid is corrosive. If the acid comes into contact with the skin or eyes, rinse immediately with plenty of water and contact a doctor at once.
- Provide good ventilation when charging.
- The charger should not be covered.
- Do not put the charger on the battery when charging.
- Never charge a frozen battery.
- Mounting only allowed on a plane surface.
- Children must not use the battery charger, except under the supervision of an adult.
- The battery charger may only be used if you have read and understood the manual.
- The appliance is not intended for use by infirm persons without supervison.

BATTERY TYPES

The following recommendations should only be considered as guidelines. In the event of uncertainty always refer to the battery manufacturer's recommendations.
CTEK XS 800 is suitable for charging all types of 12 V lead-acid batteries: open batteries, MF, AGM and most GEL-batteries. Battery sizes from 1.2 to 32 Ah. The charger can maintain batteries up to 60 Ah.

CHARGING

Connecting the charger to a battery fitted in a vehicle:

1. The power cord should be disconnected when the battery leads are connected or disconnected.
2. Identify the pole that is grounded (connected to the chassis). The negative terminal is normally the grounded pole.
3. Charging a negative grounded battery. Connect the red cable to the positive pole on the battery and the black cable to the vehicle's chassis. Ensure you do not connect the black cable close to the fuel pipe or the battery.
4. Charging a positive grounded battery. Connect the black cable to the negative pole on the battery and the red cable to the vehicle's chassis. Ensure you do not connect the red cable close to the fuel pipe or the battery.

Connecting the charger to a battery that is not fitted in a vehicle:

1. The power cord should be disconnected when the battery leads are connected or disconnected.
2. Connect the red cable to the positive pole on the battery and the black cable to the negative pole.

Start charging

1. Once you have checked that the battery leads have been connected correctly, you can start charging by connecting the charger to the wall socket. If the battery leads have been connected incorrectly the polarity reversing protection will ensure that neither the charger nor the battery will be damaged. The fault indicating lamp will then come on. If this is the case, start from point 1 under "Connecting the charger..."
2. The charging lamp or the maintenance charging lamp will now come on. When the maintenance charging lamp comes on the battery is fully charged. When the battery's voltage drops the charger will send a pulse to the battery. The pulse length depends on how much the voltage has dropped. The charger can be connected for months.
3. If nothing happens. If none of the lamps come on this may be due to the connection to the battery or chassis is poor or that the battery is faulty or has a too low terminal voltage. Another cause may be a lack of voltage in the wall socket..
4. Charging can be stopped at any time by disconnecting the charger's power cord. Always disconnect the power cord before disconnecting the battery leads. When you stop charging a battery fitted in a vehicle you should always disconnect the battery lead from the chassis before you disconnect the other battery lead.
5. If the charging lamp and maintenance charging lamp alternately flash the reason for this is the following:
- If the lamps flash a few times per second then the battery is probably sulphated. If the lamp flashes more than 60 minutes the battery should be replaced.
- If the flashing occurs with a few minutes' interval then the battery has a high self-discharge and may need to be replaced..

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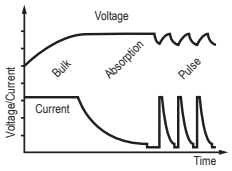
CHARGING CYCLE

CTEK XS 800 has a three step fully automatic charging cycle IUoUp. At the start of charging the battery charger delivers maximum current to the battery and the battery voltage increases constantly to a set level of 14.4 V. At this point the voltage will be regulated and kept constant while the charging current is successively lowered. Once the charging current has dropped below 0.4 A the charger switches to maintenance charging.

If the battery is loaded and the battery's terminal voltage drops to 12.9 V the charger automatically switches back to the beginning of the three step cycle. The charger requires a reverse voltage from the battery of at least 6 V to start the charging cycle, this means that if the battery is so deeply discharged that the terminal voltage is lower than 6 V the charger cannot charge the battery in question. A normal discharged battery has a terminal voltage of 10.5 V.

Charging phases:



Bulk - Main charge when 80 % of charging takes place. The charger delivers a constant current until the terminal voltage has risen to the set level.

Absorption - Complete charge up to virtually 100%. The terminal voltage is maintained at the set level. During this phase the current drops successively so the terminal voltage does not become too high. If the absorption phase has been in progress for more than 18 hours the charger switches to maintenance charging. This function prevents damage if the battery is faulty.

Pulse - Maintenance charging. Charging varies between 95% and 100%. The battery receives a pulse when the voltage drops. Keeps the battery in perfect condition when it is not used. The charger can be connected for months at a time.

BULK CHARGING TIME

The table shows times for bulk charging.

Battery capacity (Ah)	Time to ~80% charge (h)
2	1.5
8	6
20	20
32	36

THERMAL PROTECTION

CTEK XS 800 is protected from overheating. In the event of increased ambient temperature the output is reduced.

MAINTENANCE

The charger is maintenance free. Note that dismantling the charger is not permitted and invalidates the warranty. If the power cord becomes damaged the charger must be returned to the dealer for repair. The case can be cleaned using a soft, damp cloth and a mild detergent. The charger should be disconnected before cleaning.

EQUIPMENT

CTEK XS 800 is supplied with one battery lead with a battery clip and one battery lead with a ring cable lug.

WARRANTY

CTEK SWEDEN AB, Rostugnsvägen 3, SE-776 70 VIKMANSHYTTAN, SWEDEN provides a limited warranty to the original Purchaser of this product. The warranty is non-transferable. The warranty covers manufacturing faults and material defects for two years from the date of purchase. The customer must return the product together with the receipt to the place of purchase or directly to CTEK SWEDEN AB. The warranty ceases to be valid if the battery charger has been subject to improper use, opened or repaired by anyone other than CTEK SWEDEN AB or its authorized representative. CTEK SWEDEN AB provides no other warranty than this and bears no responsibility for other costs than those set out above, i.e. no possible consequential costs. This is the only expressed warranty made by CTEK SWEDEN AB.

TECHNICAL SPECIFICATION

Voltage AC	220-240 VAC, 50-60 Hz.
Current	130 mA rms (at full charging current)
Back current drain*	<1 mA
Charge voltage	14.4 V, Nominal: 12 V
Ripple**	Max 50 mV rms, max 0.05 A rms.
Charging current	0.8 A max.
Ambient temperature	- 20°C to + 50°C. (- 4°F to +122°F) The output is reduced automatically with increased temperature.
Cooling	Natural convection.
Charger type	Three step, fully automatic IUoUp, with pulse maintenance.
Battery types	All types of 12 V lead-acid batteries (Open, MF, VRLA, AGM and GEL).
Battery capacity	1.2 to 32 Ah, up to 60 Ah for maintenance.
Dimensions	142 x 51 x 36 mm (L x W x H)
Enclosure class	IP 65
Weight	0.3 kg

*) Back current drain is the current that the charger drains the battery with, if the wall socket is disconnected.
**) The quality of the charge voltage and charging current are very important. High current ripple heats the battery and ages the positive electrode. High voltage ripple can damage other equipment connected to batteries. CTEK XS 800 produces very high quality voltage and current with low ripple.

DECLARATION OF CONFORMITY

CTEK SWEDEN AB declares under sole responsibility that the battery charger CTEK XS 800, to which this declaration relates, is in conformity with the following standards: EN60335-1, EN60335-2-29 following the provisions of directive 73/23/EEC amended by 93/68/EEC and EN55022, EN 61000-3-3, EN 61000-3-2, EN55014-2 following the provisions of directive 89/336/EEC amended by 92/31/EEC and 93/68/EEC.

Vikmanshyttan Sweden, 2003-04-28

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